

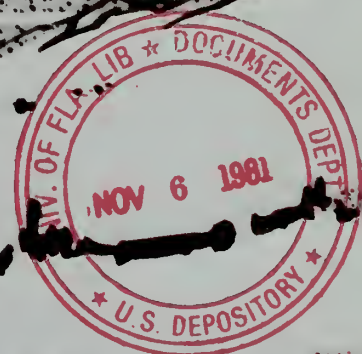
D301.81:
31/10



Combat Crew

strategic air command

OCTOBER 1981



Combat Crew

Magazine of the Strategic Air Command - 32nd Year of Publication

GEN. BENNIE L. DAVIS
COMMANDER IN CHIEF, SAC

BRIG. GEN. HAROLD J. M. WILLIAMS
Inspector General

COL. RICHARD A. PATRICK
Director of Safety

STAFF

CAPT. ROSS W. PHILLIPPE
Editor

G. FRANCIS FARRELL
Associate Editor

SSgt. DAVE WADE
Art Editor

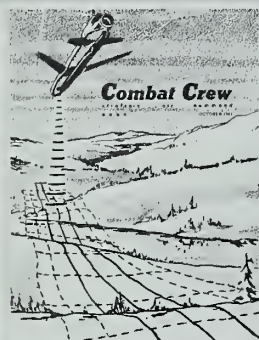
MARY JANE ABOUD
Editorial Assistant

IN THIS ISSUE

It Worked For Us	4
R&D Corner	8
Gear Up Landing	10
Blowing Snow	14
Close Encounter	16
Cold Night Out	26



Maj Gen James E. Light, Jr.
Deputy Chief of Staff, Logistics



ON THE COVER

**Artist rendering of
SAC'S Cruise Missile.
Artwork by G.A. Bul-
lock, Boeing Military
Airplane Company.**

SACRP 127-1

VOL. XXXI NO. 10

OCTOBER 1981

COMBAT CREW is an internal publication of the Strategic Air Command with the sole purpose of promoting safety. The contents of this magazine are informative and not to be considered as directive in nature. Facts, testimony and conclusions of all mishaps printed herein may not be construed as incrimination under Article 31 of the Uniform Code of Military Justice. All names, dates and places used in conjunction with mishap stories are fictitious. Written permission must be obtained from Headquarters, Strategic Air Command, before any material may be reprinted by other than U.S. Air Force organizations. Use of funds for printing this publication has been approved by Hq. USAF. Distribution FX, controlled by IGFC. SAC units submit distribution requests through local PDO. Reader to copy ratio 9:1.

Subscriptions are available from: The Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Price: \$14.00 per year domestic; \$17.50 if mailed to a foreign country; or \$1.20 single copy. Contributions are encouraged as well as comments and criticisms. Direct correspondence with the Editor is authorized. Address correspondence to Editor, COMBAT CREW, Hq. SAC IGFC, Offutt AFB, Ne. 68113. Authority to publish this periodical automatically expires on 7 April 1982, unless its continuance is authorized by the approving authority prior to that date.

Time after time, the prebrief has concluded with . . . "Safety of flight will be paramount throughout." Mission plans highlight . . . "Safety of flight will not be compromised." The ORI/ Buy None is flown under . . . "Peacetime safety of flight criteria." Safety of flight is always "preached" to the aircrew. The obvious implication is therefore . . . if the crew is safe, safety of flight will be maintained — right? Not necessarily. I submit to you that safety of flight is indeed a two-edged sword and requires the proper application of BOTH edges.

The aircrew certainly has the final input toward the assurance that safety of flight will be maintained. How well the machine is flown is YOUR job. How well the machines fly, however, is the job of over 20,000 SAC maintenance technicians around the world. These individuals are tasked to provide combat/ combat support aircraft which are capable of performing the assigned mission in a safe, effective manner. And — unless you've been working around a maintenance organization in recent months — you may not be aware of the significant changes we've implemented in the way these skilled

SAFETY OF FLIGHT — A Two-Edged Sword

personnel are trained.

The crew chief is probably the individual that first comes to mind when you think about maintenance. SAC's crew chiefs are better trained today than at any other time in the recent past — and they will be even better qualified in the near future. By the end of this year, aircraft mechanics who reenlist will be sent back to Air Training Command for a lengthy, highly-technical advanced course. To amortize this added training cost, action has been taken to retain SAC crew chiefs on SAC aircraft for as long as twelve years. This will allow an accumulation of a great deal of experience.

We have not overlooked the specialists in both the Field Maintenance and Avionics Maintenance Squadrons. Through a SAC unique program, we are sending non-SAC technicians, who have come to us from other MAJ-COMS, back to school to learn our strategic weapons systems. Since inaugurating this program two years ago, over 13,000 individuals have attended technical courses at local Field Training Detachments. Also, personnel managers have agreed to consider prior weapons systems maintenance experience when reassigning these specialists.

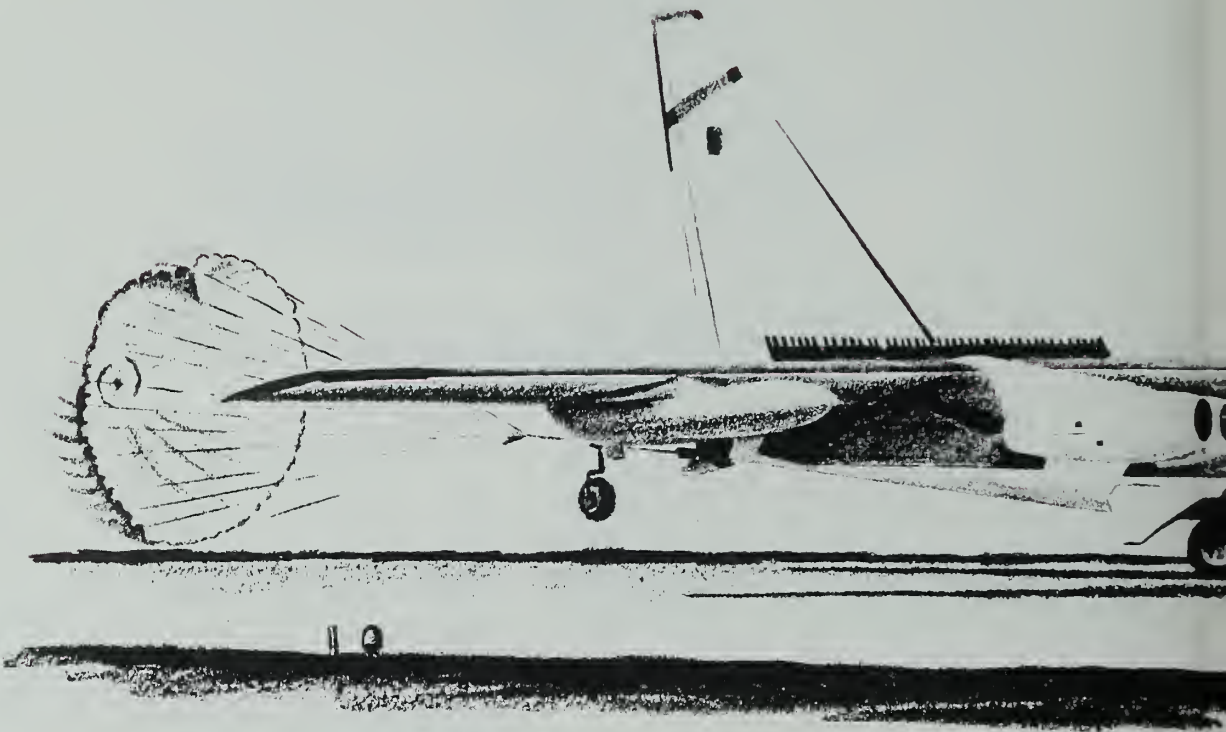
Next, the charter of maintenance's "Stan-Eval," the Maintenance Standardization and Evaluation Team, was significantly enhanced a

year ago. Training is now a significant portion of the team's charter. Prior to this change, the evaluator would only evaluate and report. Today, these highly qualified technicians provide remedial training to individuals who do not successfully complete their evaluation. Also, the individual's trainer is evaluated on the same task to insure that he or she is fully capable of performing the job.

SAC maintenance is also now fully involved in the application of the Instructional System Development process to maintenance needs. Today, one-third of the 4235 Strategic Training Squadron at Carswell AFB are maintenance people. In addition to producing training aids such as sound/slide, video tapes, and workbooks, they are involved in some far-reaching special projects. One such project will make On-the-Job Training (OJT) more structured and, therefore, more effective. Another is providing our younger maintenance officers with the technical and managerial skills they need to do their demanding jobs.

Let me conclude by reassuring you that SAC Logistics has one overriding objective — to provide safe and capable machines to you, the aircrew. We have done well in the past and are determined to do better in the future. In peacetime, safety of flight is, indeed, of prime importance. ★★

IT WORKED FOR US . . .



Capt Steven J. Redman
340th Bomb Sq, Blytheville AFB

The IG team had landed on base to evaluate the wing, and specifically, our crews on their ability to effectively carry out their flying missions. As our sortie began to taxi, I became aware that most of the bombing and navigation equipment would not work. Our equipment just would not cycle through the warmup timers. Also, when the aircraft changed headings enroute to the runway, the heading marker on the radar scope would not follow. I was getting nervous. So much for this opportunity to shine! How on earth are we going to handle this one? Ahha! That was the key: How are WE going to handle this one?

It had the beginnings of a nightmare, where I was to be the victim. Our crew had handled equipment malfunctions before; in fact, on training missions we had planned around some similar problems. Visions of our certifications, no-notice interroga-

tions, T-10 trainers, target studies, hangar flight sessions and the like passed through my mind. We had completed and attended all our briefings just to prepare us to fly this mission. Six months of work had been designed by the staff to get us ready for this sortie. Now we would find out just how well we were prepared. Would our extensive training pay off?

We took off and flew along our flight through air refueling and out to the low level area. The navigator and myself were using our inflight maintenance malfunction manuals to try and correct the problems, but nothing seemed to work. By the time we reached low level, all we had was a radar scope whose heading marker would not turn when the airplane turned. Fortunately, a manual set of the heading gave me a pretty close approximation to aid our low level navigation.

This was a real challenge for the crew. To



Crew Coordination

overcome the problems the crew had to work together. We would now have to use some of those procedures we had planned on in case of an emergency. You know how that goes. If you cannot go synchronous, go alternate — either SRAM sharkey or fixed angle. If you can't do those, try pilot visual.

To shorten a long story, and a low level route, we used a modification of pilot visual and fixed angle to successfully fly the low level portion of the mission. However, it took more than six individuals to pull it off — six individuals working together as a crew, constantly striving, aiding, assisting, cross-checking and helping each other. To put it into two words, it took good crew coordination.

I can remember hearing about crew coordination even before my first B-52 flight at Castle. The instructors there constantly stressed the importance of good crew coordination, working together as a

team. I even remember hearing a lot more about it **after** my first flight. And at my first operational unit we sat and discussed with other crewmembers how to better fly together. The instructors, standboard evaluators and staff personnel all emphasized the importance of good crew coordination.

"It is something you can work on while you fly," they said, "or when you mission plan, or even when you are on alert. Read the regulations and flight manuals diligently, critique each of your flights, and cross-talk problem areas or possible problem areas among the crew. Also plan backup and alternate missions in the event your flight does not go as scheduled." They were right. The more we work together, the smoother and more effective we become. It even adds to the safety of your flights.

Think about it and work on it — crew coordination can work for you and pay handsome rewards. It sure worked for us.

EUROPEAN TANKER TASK FORCE

Notes of a Young Aircraft Commander

Capt Charles K. Bergman
911th AREFS
Seymour Johnson AFB

SAC has worldwide commitments for air refueling support. Because of the variety of aircraft we support and the ever changing world situation we operate in, we need to remain continually ready for worldwide deployment. Many of the things we take for granted in our day-to-day CONUS flying operations change considerably in overseas areas. We must quickly adapt to these changes to carry out our mission safely and effectively. This article was written to highlight some of the differences I encountered while deployed to the European Tanker Task Force.

Specifically, I'd like to review four general areas with you — they are:

1. Fuels — Grade properties and limits.
2. Weather — Forecasting differences/hazards.
3. Takeoff data — Some often glossed-over procedures.
4. Mission notes — Overwater/cell/anchor techniques/approach plates.

Fuels

First let's talk about fuels. You'll use various fuels while deployed to the ETTF. For example, in England I used JP-8; in Saudi Arabia it was JP-5. The characteristics of these fuels differ from the old standby JP-4. A review of page 5-12 of the Dash I is helpful in illustrating these differences. You'll notice that the freeze point is higher for JP-5 and JP-8. Let's consider an example: Suppose you are required to cruise at high altitude for an extended period of time. The freeze point of JP-8 is -50°C; therefore, if you cruise above FL330 on a standard day you are flying at temperatures below the freeze point of your fuel and you are inviting fuel control problems, icing and possible engine flameouts. True, NATO fuels have icing inhibitors. I think it's prudent however, to avoid long, high altitude flights with JP-8 if possible. Another point about JP-8: Expect slower starts or hung starts on cold mornings. It just doesn't light

off like JP-4. Engines may not accelerate as quickly with JP-8 either — certainly something to consider — so plan for an early go-around if needed.

Weather

Our second area of interest concerns weather forecasting differences and some associated hazards. The European System forecasts in Octas (Eighths of sky coverage) as opposed to tenths in the CONUS. Also information is provided about the type of cloud cover (stratus, cumulus, etc.) which is helpful. I saved a DD Form 175-1 from Saudi Arabia which I'd like to use as an illustration (Fig 1). The Riyadh International (OERY) Forecast here is 4/8 strato-cumulus at four thousand, 7/8 alto-stratus at ten thousand feet. A ceiling in this system is defined as five eighths coverage as opposed to six tenths coverage with our CONUS system. So our ceiling here is at ten thousand feet. Notice the VSBY/Wea and SFC wind blocks; these reflect typical forecasts for Saudi in the winter. The actual conditions that day were clear and million — not a cloud within a hundred miles — but visibility was limited to approximately one mile in blowing dust. With only non-precision approaches available this kind of weather demands you keep a suitable alternate in mind. And your alternates aren't just around the corner, so plan ahead and save some fuel — you may need it. Weather conditions are also color coded. If a controller tells you a base is "Code Red" that's bad; if he says "Code Blue" that's good. For a complete review, consult the back of the European IFR Supplement. While you're there you'll notice a conversion table. This will come in handy since distances are often reported in meters instead of feet and altimeter settings are in millibars instead of inches of mercury. Learn to convert quickly and you'll be ahead of the game. Speaking of altimeter

settings, there are some areas in Europe, especially Great Britain that use different altimeter setting procedures below the transition level than the ones we use in the CONUS. We use the QNH setting; they use QFE. From 51-37, "the QNH altimeter setting results in the altimeter indicating height above mean sea level (MSL), while QFE altimeter setting results in the altimeter indicating height above field elevation." So if you set QFE, your altimeter should read approximately zero at touchdown as opposed to the touchdown MSL elevation. The important point is to know what type of setting the controller issues you and understand how that affects the altitudes you fly to find the runway when the weather is down around your socks. For an excellent review of altimeter setting procedures consult AFM 51-37, pages 1-4 and 1-5.

Mission Notes

Next, how about some general comments about Tanker Task Force Operations? For example: Do you check the air refueling manifold to engine manifold valve to insure you can burn from the FWD and AFT body tanks, on long overwater flights? You should. If you don't and it fails, you may be carrying a lot of fuel you can't burn. On deployments and redeployments you'll need that fuel. It failed on me once but I had checked it early and was able to plan the offload/burn sequence accordingly and complete the mission. Have you reviewed the DASH 3 and SACR 55-11 lately? You'll fly more cell missions in Tanker Task Force Operations, so brush up on climb, join-up, position change, and radar out procedures. Also you'll be doing a lot of work with Ground Controlled Intercept (GCI) controllers. Make sure

AIRDROME	CLOUD LAYERS	VSBY/WEA	SFC WIND	ALTIMETER
OERY	4SC040 7AS100	3NMBD	180 15/20	2995
INTERMITTENT		1NMBD	180 18/28	

FIGURE 1

Takeoff Data

Our next area of concern is takeoff data. There are some takeoff data procedures we seldom have occasion to use in our training environment back here at home. The typical mission in the European Theater puts us at near maximum gross weights for the runway available. Takeoff data needs to be an area of increased attention for aircrews. The advantage of headwind, normally ignored in routine takeoff data computations may be required. If so, first try applying 50% of the headwind advantage as directed by the CAUTION on page 1A2-7 of the performance manual. If that doesn't get you off you are authorized — with unit commander approval — to use 100% of the headwind component. And finally there are bases which have an RCR waiver. For example: Because of the porous runway at RAF Fairford, England, they are authorized to use an RCR of 15 when the runway is wet as opposed to an RCR of 09. These are the three takeoff data corrections you should become familiar with prior to your deployment; if you do so now you'll avoid some frantic moments at the end of the runway while your ARCT looms ever closer.

they confirm those three important items for you prior to rendezvous: Altitude, altimeter setting, and noses cold prior to allowing the receiver in your part of the sky. Once you've got these the rest may not be easy, but it will be safe. Finally, I'd like to make a comment about civilian letdown plates. There are areas that we are required to operate in that do not have DOD FLIP approaches; Riyadh International is one such place. You will need to know how to use the Jeppesen approach plates to safely operate there. Don't wait until you're short on time, fuel, and in the weather before taking a look at a Jeppesen — that's too late. Get one now, study it closely.

There you have it — a few notes about what to expect in the European Theater. Much more can be written; this is really just the tip of the iceberg. These are just a few of the things I've found to be important. The first step of course is to realize that the overseas flying environment is different and more challenging. The second step is to study beforehand the important differences and prepare to operate in that environment. Then and only then will you be able to carry out your mission safely and effectively.

KC-10A AIRCREW TRAINING



Captain Harry Kingsbery
HQ SAC/XPHD

Previous articles in the R&D corner have updated you on the acquisition and delivery of SAC's newest aircraft, the KC-10A 'Extender'. Those articles described in detail the capabilities of the KC-10 and highlighted that the aircraft will provide the capability to achieve worldwide mobility for U.S. General Purpose Forces, independent of forward bases. However, until now all the articles have omitted a vital portion of the KC-10 story. That part of the story is the program for KC-10 aircrew training. The development and operation of the training system for the KC-10 are unique in the AF training annals and are worthy of a story of their own.

In March 1980, DC-10 training firms were requested to bid on providing an AF KC-10 Aircrew Training Program. Only commercial DC-10 firms were requested to bid in order to follow the acquisition concept used in the aircraft procurement. This allowed for maximum use of the commercial aviation training experience in wide-bodied aircraft. Leased training was also investigated prior to the bid request; however, the long term availability of DC-10 training could not be guaranteed. The bid request for training required a complete training system with the contractor providing all ground instruction and operation. The intent of this requirement was for the contractor to guarantee performance as measured by an aircrew's ability to

perform all flight tasks IAW SACR 60-4. Additionally, the AF request specified that this performance be achieved with a minimum of flying time which will allow maximum use of flying hours in mission support. Industry responded to the AF request and in July 1980, American Airlines (AA) was selected and awarded the contract for providing the KC-10 Aircrew Training Program.

In developing the KC-10 program, AA utilized its successful commercial training experience and maximized the use of simulation and computer-aided instruction. Specifically, the program developed by AA provided for a/an:

KC-10A Simulator with motion and visual systems

KC-10 Cockpit Procedures Trainer

Boom Operator Trainer

Cargo Loading Trainer

PLATO computer assisted Instruction System

Audio/Video Carrels

Instruction, operations and maintenance of the training devices

The following description briefly outlines the major components of the training program:

KC-10A Simulator

The simulator will be a modified DC-10 simulator that is the latest state-of-the-art device

r&d corner

utilizing a six-axis motion system and a day/night/dusk Computer Generated Image (CGI) visual system. The simulator flight deck will accurately represent the KC-10 aircraft with the overall environment of the total flight regime, including air refueling. The two instructor stations will be on board with one for the P/CP team and one for the Flight Engineer.

Cockpit Procedures Trainer (CPT)

The CPT is a companion device to the simulator, intended for use in individual tasks as well as crew type training programs. These will include normal, degraded, alternate and emergency procedures utilized by flight crews. The CPT is intended for use in conjunction with, and as a reinforcement for academic training on aircraft systems and procedures. Student proficiency in normal and emergency cockpit procedures must be fully developed in the CPT prior to advanced training in the simulator.

Boom Operator Trainer (BOT)

The BOT consists of two major subsystems — the Air Refueling Operator (ARO) station and the visual display. The ARO station accurately duplicates the aircraft environment and provides for three seats abreast; an observer, a student and an instructor. The visual display system is integrated with the ARO station and consists of: (1) a scale model version of the KC-10 aerial refueling boom, associated controls and drive systems; (2) scale model receiver aircraft (B-52, F-15, F-16B, C-5, F-4 and KC-10); (3) a monochrome camera installation for generation of the boom and receiver aircraft image; and (4) a monochrome projector with associated optics/screens for display of the generated

image to the ARO station. This device is fashioned after the very successful KC-135 Boom Operator Part Task Trainer already being used by Castle CCTS.

Cargo Loading Trainer (CLT)

This trainer is similar to that currently being used in the KC-135 training program. In addition to cargo placement training, the 1/12 scale model device has the capability to train personnel in cargo pallet/passenger seat configuration and weight/balance computations.

Audio-Video Training Carrels (AVT)

The AVT carrels provide the capability for individual instruction in all aircraft systems. The AVT consists of an enclosure containing a mini-carrel, a PLATO terminal, video tape players and color TV monitors.

The training devices described will be extensively used in ten separate courses of instruction. These will include initial skill acquisition through refresher courses to instructor training. The manner in which the training devices will be integrated with the courses of instruction can be illustrated by the following examples of the proposed pilot, flight engineer and boom operator Initial Qualification Training courses.

Pilot Initial Qualification

	Duration Weeks
17 academic days including CPT	3½
15 simulator missions	3
1 aircraft mission	½
Total course approx	7 weeks

Continued On Page . . . 30

Gear Up Landings



Maj Gary T. Grieshop
Maj Richard L. Smith
97 BW Blytheville AFB

This is a three part story from three unique perspectives. Major Gary (Trigg) Grieshop was the instructor pilot, Major Leon Huskey was along for a pilot requalification flight, and Colonel O. K. Lewis was the 97BMW Deputy Commander for Operations.

Perspective 1

I already know that! In Undergraduate Pilot Training, one of the first things the Instructor Pilot (IP) taught me was to put the gear down before you try to land the airplane. It taxis so much easier that way. Well, now I am an IP with over 2500 hours, most of it in the KC-135 and I always remind my students to "put the gear down before you try to land." Sure enough (you guessed it) I landed gear up!

It wasn't as bad as it could have been. I had boarded the airplane during a taxiback to supervise some transition flying and a pilot requalification. The airplane flew well initially and the subsequent touch-and-go landings were normal. However, following a touch-and-go, a low rumbling noise came from the nose gear area and only the main gear came down on the next pattern. After recycling the gear several times and attempting some moderate "g" pull ups, the nose gear was still not properly positioned. We declared an emergency and began using the amplified flight manual procedures, but — no luck!

We called Mother Boeing and asked the design engineers for help. It was a loud "Help" too. They tried everything, but after all that assistance, the nose gear just wouldn't budge and we were faced with a gear up landing. My first question was, "Why me?" Fortunately, we had one of the top squadron crews on board: Capt Jack Jordan (AC), Lt Gary Cooper (CP), Lt Keith McDonald (N) and A1C Jerry Erickson (BO) with Major Leon Huskey along for the pilot requalification. We flew a normal ILS

approach (if any emergency can be considered normal) to a landing. If ever I was going to make a "greaser," this was it. I held the nose gear off until about 50 KTS and then lowered it to the runway.

Actually, it's hard to remember all that happened after the touchdown, but the aircraft stayed in the center of the runway using differential braking and we all evacuated safely after the plane stopped. I had recently practiced emergency egress in a training seminar and was amazed at my total recall during the exit. Boy! Was I glad to see the ground — fire suppressant and all. However, my new nickname, "Nose Gear Grieshop," keeps reminding me that nose gear up landings are not authorized . . .

Perspective 2

This was only my second ride in the KC-135 since returning to flying and I was certainly excited about getting back in the airplane. The flight appeared to go normally and we stopped to pick up Major Trigg Grieshop to fly some transition for my requalification. However, Murphy's law intervened and we couldn't get the nose gear down. So here I was, the new guy on the block, and already in the swamp eye-to-eye with the alligators. I hadn't had this much excitement in a long time, but Trigg's extensive knowledge of the aircraft and the strong support we received from the wing staff and Boeing engineers reassured me everything was going to work out OK.

Because I was in the seat, I got to fly some while the experts analyzed our remaining options. After Lt Cooper moved into the copilot's seat, I helped run the manual extension checklist in our futile (and very tiring) attempts to get the nose gear down.

. . Not Authorized



Ultimately, I became a passenger in the back, strapped in for an emergency landing, and my fate in someone else's hands. This gave me plenty of time to mentally review the status of my life insurance policies and my will (which I have since updated).

The touchdown was extra smooth, but there was no doubt when they lowered the nose to the ground — all that scraping! I was out the overwing hatch and off the wing faster than an over-35 field grader has a right to move. This was not what I had expected on my second flight, but the professionalism and exceptional flying capabilities of the entire crew made me glad I was back in SAC . . .

Perspective 3

Our wing had just completed a highly successful CEVG inspection and I was justifiably proud of the outstanding performance of our flight crews. Now we were polishing up our final preparations for the upcoming ORI and I felt the aircrews and aircraft were peaking just at the proper time. It had been a typical training day — until I received the call advising of a local KC-135, piloted by our Chief of Training Flight, which couldn't get its nose gear down. The CEVG accolades were quickly forgotten and soon to be tested as we got down to the serious business of assisting an airborne emergency to a safe recovery.

A hotel conference was established, Major Grieshop explained the problem, and we assembled the appropriate staff in the Command Post. Hydraulic, landing gear, and electrical specialists augmented our normal team. 8AF, SAC HQ, and the Boeing

engineers were patched into the conference as we continued to review the remaining options. I can't say enough about the dedication, professionalism, and expertise demonstrated by all parties while assisting the aircrew to solve this serious problem. Eventually we ran out of ideas, and the aircraft was running out of fuel, so the decision was made to land the plane with the nose gear up. We were naturally concerned for the crew and the aircraft, but confident that this crew could handle the task at hand.

As I watched the landing — it was a classic, a perfect touchdown and the plane stopped right on center line. Flames in the nose area were quickly suppressed by the fire department and the entire crew exited safely. This incident reaffirmed my conviction that Strategic Air Command enjoys the best trained air and ground crews in the world today. It makes one extremely proud to be a member of the team.

Major General Buckman called the recovery an example of superior airmanship. Colonel Bond cited the professionalism demonstrated by the flight crew, Command Post personnel, and the Emergency Response Forces as all contributing to the successful recovery of a valuable aircraft, and most importantly, the aircrew. It was not a matter of luck — it was a combination of training, skill, and most importantly, that intangible quality — professionalism. Nevertheless, to avoid all this turmoil, remember, gear up landings are not authorized!

RAF FAIRFORD

RAF Fairford became an active military installation in September 1979 with the arrival of the first contingent of SAC KC-135 aircraft. Since then, numerous SAC aircrews have rotated through RAF Fairford during their temporary duty in England. Although many are already familiar with flying in the United Kingdom, RAF Fairford is a new and unique experience for all. The purpose of this article is to acquaint aircrews with the peculiarities of the airfield and the local flying environment. Hopefully, this information will assist you in flying more safely in the local area.

Airfield Environment

RAF Fairford is located in the southwest region of England, approximately 50 miles west-northwest of London. Its single runway (28/10) is 9997 feet long and 200 feet wide with 1000 feet of overrun at both ends. The runway slopes 0.31% uphill towards the west. The first 500 feet of runway 28 and the first 1000 feet of runway 10 are concrete; the remainder is a porous friction surface which provides improved braking during wet conditions. Engine shutdowns or 180° turns are not allowed on the runway to prevent damage to the porous surface. Parallel taxiways are located on both sides of the active runway. When transiting to a visual approach, the dark porous surface runway is difficult to see, and the parallel taxiway may be mistaken for the runway. Runway 28 is the preferred instrument runway with both a PAR and ILS published approach. The equipment for both these approaches is of vintage British design, so be sure to check NOTAMs for their current status. A 3° glide slope coupled with a narrow runway can create an illusion of being higher than normal during approach and landing. Caution is required to avoid landing long and hard.

Runway lighting includes a British Calvert approach lighting system, a three-bar Visual Approach Slope Indicator (VASI), High Intensity Runway Lights (HIRL), and Runway End Identifier Lights (REIL). The third bar of the VASI is to accommodate long bodies or jumbo aircraft and should be disregarded by KC-135 aircrews.

ASR and TACAN approaches are available to both runways 28 and 10. The TACAN approach to runway 10 takes you through the RAF Kemble restricted area (EGR 120) and is not authorized when the area is active. Check with approach control before leaving the IAF for the status of the area. Circling approaches to the south are authorized for both runways.

The main airfield complex, including SAC Operations and the SAC ramp, are located on the north side of the field. The northeast loop is presently used to park SAC aircraft. The hardstands are originally designed for B-47s and are small, but adequate for KC-135s. The turn into parking is tight and may require full nosewheel deflection and asymmetrical power.



Local Flying Area

The local flying area is shared with a diversity of military and civilian aircraft. There are nine active airfields within 20-25 miles of Fairford. These airfields generate a variety of aircraft from the VC-10s at RAF Brize Norton to the F-111s at RAF Upper Heyford — plus every conceivable variation between these two! Cotswold Radar and Brize Norton approach control, both located at RAF Brize Norton, provide standardized departure and recovery service to these units. There are also five glider fields within 15 miles of Fairford. Although most glider flying is done on weekends during the summer, sufficient activity exists year-round to create a potential hazard.

The Fairford area also lies nicely on the track of most civil light aircraft transiting between the northwest and the southern coast. The RAF Brize Norton Special Rules Zone to the north and east and the RAF Kemble Restricted Area (EGR 120) to the west tend to funnel this traffic through the Fairford area. RAF Fairford is within a Military Air Traffic Zone (MATZ) which encompasses the area within a 5NM radius of the base from the surface up to 3000 feet above ground level. Clearance is mandatory for entry into the MATZ for military but not civil aircraft. However, gliders and non-radio equipped aircraft are restricted from transiting this area.

Altimeter Procedures

Aircraft operating in the RAF Fairford area will be controlled by Cotswold area radar, Brize Norton approach control, and Fairford final controller. Cotswold radar and Brize Norton approach are RAF agencies which use QFE altimeter settings for aircraft separation below the transition altitude (3000 ft). An aircraft landing at an aerodrome using a QFE pressure setting will have an indicated height of zero at touchdown. While under the control of Cotswold radar and Brize Norton approach control, crews will be issued both QFE and QNH settings for use below the transition altitude. Crews will use the QFE setting for assigned altitudes until instructed to set QNH for final approach and landing. After QNH has been set on final approach, procedures will be standard. If a QNH setting is not received on final approach, or if there is any doubt as to the correct altimeter setting, execute a missed approach and resolve the problem before attempting another approach.

A final note on flying in the Cotswolds. This article discusses only some of the peculiarities of the local environment, not all of them. Numerous articles on flying in the UK exist which are applicable to RAF Fairford. Seek these out and learn as much as you can in advance. The old adage "forewarned is forearmed" is especially true in this area. Hopefully, armed with the above information, your arrival and stay in the beautiful Cotswolds will be both enjoyable and safe!

Blowing Snow and Other Hazards

Maj James C. St. John
HQ SAC/DOWA, Offutt AFB

During your weather briefing you notice the forecast for your return on your SAC Form 597 looks like this:

heights higher than six feet (below six feet it is called drifting snow). It can be a very localized phenomenon. Blowing snow can occur at one end of a runway taking the RVR below minimums, while the other end remains unrestricted. Visibilities in blowing snow can change rapidly and drastically.

TERMINALS	VALID TIME	CLOUDS (Standard Symbols/Figures)	VSBY - WEA	SFC WIND	QNH (INS)
DESTINATION KHOM	22015 % TO 2215 %	5BKN 10 OVC INTER 2X	55 - V2 SBS	CAZ0634	29.78

This means that a) the weather forecaster can't make up his mind; b) the forecaster is trying to stay out of trouble by covering all possibilities; c) the forecaster enjoys confusing aircrew members; d) sometimes it will be around 500 and 5, and sometimes it will get worse; or e) none of the above.

Answer 'd' is the closest to being correct. Many crewmembers aren't familiar with the true meaning of the term *intermittent*. A forecast of an intermittent condition means that the condition is expected to occur less than 50% of the period for which it is forecast. The other condition is called the predominant condition. Furthermore, the intermittent condition is expected to persist less than 30 minutes each time it occurs. It all seems rather complicated but then weather is rather complicated. That's why we need *intermittent* groups. The code used to transmit terminal forecasts only permits a change of conditions once per hour except for the intermittent category. This is used for rapidly fluctuating conditions. Examples are showery precipitation (rain or snow), thunderstorms, fluctuating visibility in fog and visibilities in blowing snow, as in our example.

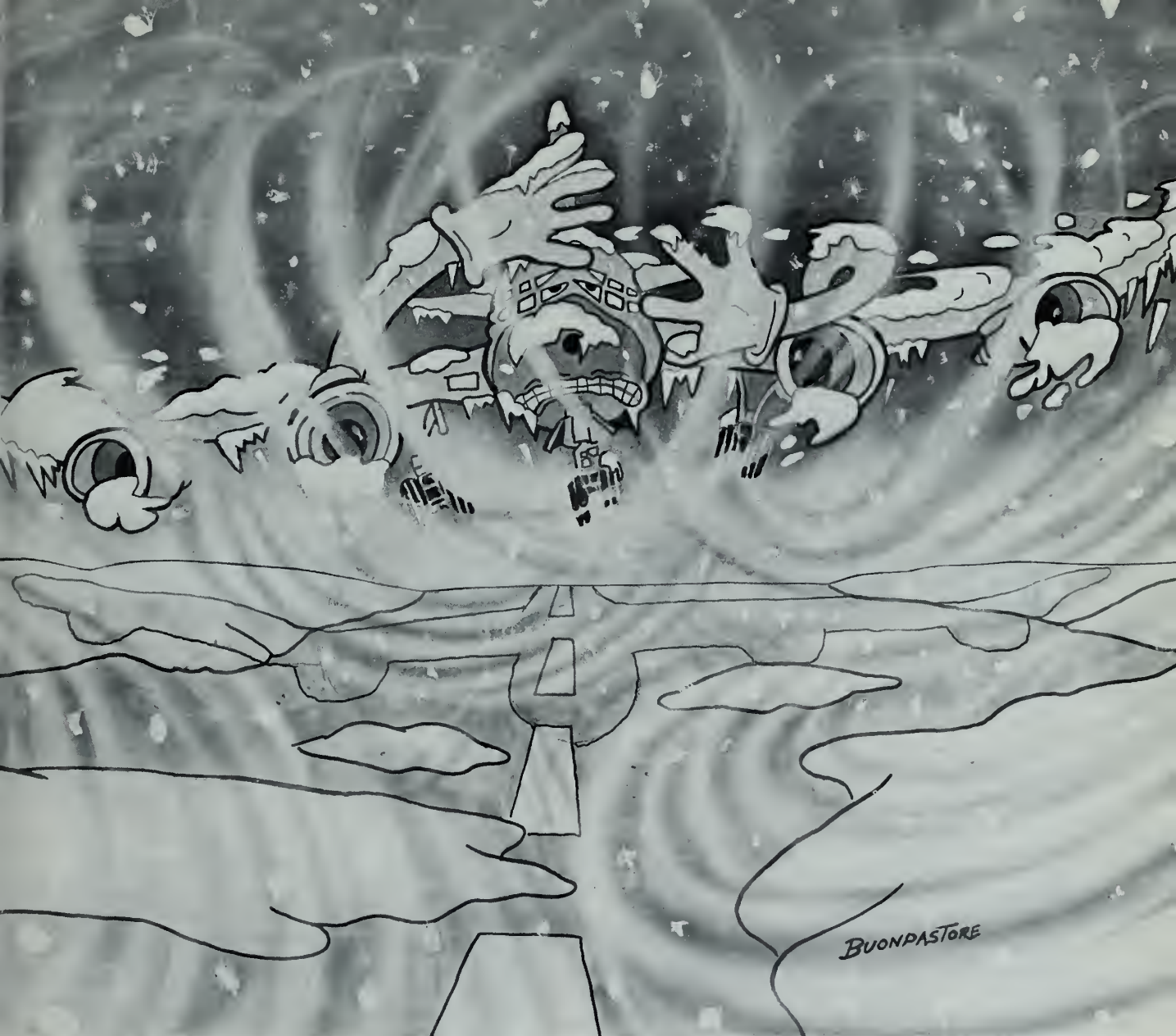
Blowing snow is a particularly hazardous phenomenon. It occurs when strong surface winds pick up snow which has already fallen and carry it to

This makes it a real hazard during approaches and landings.

AFM 51-37, your bible on instrument flying, has some things to say about transitioning to visual conditions in snow and blowing snow. It warns that snow will mask many of the visual cues, such as runway markings and the contrast with surrounding terrain. Paragraph 16-19d(2)(a) reminds you to become familiar with the runway lighting and markings. It continues: "WARNING: Any abrupt attitude changes to bring the projected touchdown point into the visual segment may produce a high sink rate and thrust/lift problems at a critical time . . ."

The next subparagraph (6-19d(2)(b)) warns against "duck under" maneuvers to land in the first 500-1000 feet of the runway. If you attempt to establish a visual profile similar to the one you see on a normal approach with good visibility, you will tend to aim at a spot short of the runway. This will result in a high sink rate and may cause an undershoot or hard landing.

The point to these warnings is that it's one thing to break out of a low overcast and transition to visual conditions with good visibility. It's quite another to transition to visual in minimum visibility where your cues are blurred and depth perception is



Artwork by Nicholas Buonpastore

poor. Because blowing snow is picked up from the ground by the winds, the closer you get to landing, the denser the snow will be. This means that your visibility will get progressively worse on your approach. This will tend to make you lock on to your visual cues, so that you don't lose them.

Unfortunately, channelizing your attention outside the cockpit may result in ignoring important information from your instruments (like airspeed and sink rate, let alone a final check to see if somebody remembered to lower the gear). Also, if you channelize your attention on a visual cue such as a line of runway lights you will have a tendency to steer your airplane toward that point.

This may sound slightly farfetched but unfortunately these factors have played a part in many

mishaps. If you make an instrument approach to a terminal with snow/blowing snow, you'll need to plan the approach carefully. Make sure that you're thoroughly familiar with the available visual cues, especially the runway lighting scheme. Know where the threshold is in relation to the lights. When briefing the approach in the cockpit, make sure each crewmember knows what his duties and tasks will be. Try to stabilize on glide slope and heading as soon as possible to avoid abrupt heading and power changes. At decision height, be critical. Don't accept a marginal runway environment. Remember it will probably get worse as you get lower. Don't pick a projected touchdown point close to the first brick. Finally if things don't go as planned, don't hesitate to go around and try it again.

Continued On Page . . . 21

"A Close Encounter of the Worst Kind."

CAPTAIN G. DAVID HERNANDEZ
41st Air Refueling Squadron, Griffiss AFB

Two warm and sunny weeks at Zaragoza AB, Spain have faded into the past as we now traverse the skies of the European continent. The air refueling portion of our mission is complete, after having orbited in an anchor pattern above West Germany. Steve, our boom operator, elaborates about the pain in the back of his neck. "CRIPP 58" is cleared for the final ascent to flight planned altitude enroute to RAF Mildenhall. During the climb, intermittent views of the countryside become completely obscured as we enter a dense layer of altostratus cloud, from which we would finally emerge above the English Channel. One of the most exciting moments of my flying career is soon to occur. . .

The flight deck is reasonably busy: The pilot is trying to interpret a controller's instructions, the copilot is selecting the next TACAN station, as I find the incessant static of the HF radio to be most disagreeable. Passengers are in the cockpit inspecting the panoply of dials and gauges, but as the turbulence intensifies most of them decide this to be the opportune moment to return to their seats in the cargo compartment.

The air/ground conversation drifts into the background as I search my radarscope for unfavorable weather, although none has been predicted. The small country of Luxembourg passes behind the aircraft as we now enter Belgian airspace. We bid a fond adieu to a French controller who directs us to establish contact with "Belgar Radio."

"Belgar Radio, Cripp 58 with you flight level 310," "Cripp 58 Roger, proceed on course to Koksy" "Cripp 58. . ."

For an inestimable moment relative silence overwhelms the cockpit. The radios are quiet, the turbulence has ceased, the crew's interest is waning as the hazy white enveloping cloud sets the stage for an encounter soon to take place, thence to pass in the wink of an eye. Were it not for airspeed indications one might believe us to be motionless. Suddenly, the silence is broken.

"Cripp 58 descend to and maintain flight level two-eight-zero."

"Roger, Cripp 58, departing three-one-zero for flight level two-eight-zero."

The airplane begins a shallow descent, sufficiently imperceptible to comfort the passengers in the cargo compartment.

". . . passing three-zero-zero for two-eight-zero."

"Cripp 58, say altitude passing."

After responding, the Belgian controller requests an increased rate of descent. We comply. The VVI acknowledges after more nose down trim is applied.

"Crew passing FL290."

"Cripp 58 continue descent to FL270."

"Cripp 58 . . . descending to FL270."

Seconds later, Belgar Radio calls back with a heading vector:

". . . left to heading three-one-zero, and Cripp 58 increase rate of descent."

"Time to throw out the anchor . . .", I think aloud.

"Crew, speed brakes." The plane begins to shudder as the speed brakes are extended. I lean forward again to see the VVI which is now exhibiting a higher rate of descent. With each ensuing transmission a subtle yet discernible note of apprehension is evident in the controller's voice. I stop cross-checking altimeters and direct my attention to my radarscope. I configure the set for close-in skin paint. (As I had earlier been using it in order to watch fighters approach in the refueling anchor.) Impatiently, I wait for the set to recycle into its new mode of operation.

"Cripp 58, turn further left heading . . ."

The plane continues to shudder as I attempt to rest my forehead against the glare shield of the radarscope. The variable range happens to be set at slightly over three and a half miles. Before I have time to adjust the variable range, a bright spot has suddenly appeared at the outer edge of the scope beside the heading flash. The spot is actually oval. I glance up briefly at the altimeter to see that we are still in rapid pursuit of FL270. The target has closed so rapidly that by the time I look back at the scope and find the interphone switch, the range has deteriorated to less than three miles. The target is tracking down the heading marker. There is no doubt in my mind that we are on a conflicting course with another airplane, as I press the interphone switch:

"Pilot, traffic twelve o'clock, three miles, closing fast. . . turn hard left now. . . !"

The last part of my statement is made with great vehemence. Even before I've completed my statement the target has closed to nearly 2½ miles. I look away from the scope with one eye closed and attempt to look outside the cockpit windows. "I have it on radar!" I yell across the cockpit. Realizing that the visibility inflight must be very low (perhaps less than a mile) I quickly look back at my radarscope. I feel my heart palpitating as I watch the target close to within two miles. I must surmise that the oncoming target is at or near our altitude, so I press the interphone switch again:

"Traffic inside two miles, twelve o'clock, turn further left now!"

The seconds seem to pass interminably slow as our airplane continues to fall out of the sky and I adjust the tilt and gain controls. I have clearly defined the fuselage and wings of a large airplane. The altimeter pointer is rapidly winding counterclockwise. Altitude separation may be our only hope as I continue to watch the target close. "A mile and a half, slightly right of twelve o'clock. . ." The target has perceptibly moved further away from the heading flash.

"ONE MILE. . ."

The copilot calls out the traffic. The bank angle increases to the left and the nose of the airplane is lowered further. . . We rapidly descend well past our assigned level off altitude.

A DC-8 passes to our one o'clock position, and ". . . slightly high."

The ineffable expression possessed by the pilots confirms this was a close one.

The copilot relates the incident to Belgar Radio and after a long pause the voice of another controller replies.

Someone in the cargo compartment is on interphone wanting to know what has just happened. I look back to see that our passengers are visibly shaken. Slowly, everything begins to return to normal, even our pulse rates. We finally break out of the overcast above the English Channel. A friendly British air traffic controller welcomes us into his radar area. "Good afternoon, Eastern Radar, this is Cripp 58 level flight level. . ."

The sky above is blue, and the approaching English coastline is a most welcome sight.

Airborne radar in the KC-135 is designed for use as a ground-mapping radar, for maintaining cell position (station-keeping) and for circumnavigating areas of severe weather. According to the Dash I, the APN-59 radar, when used by a navigator who understands its capabilities and limitations, will aid and simplify his job and increase his accuracy and efficiency.

Contrary to popular belief the APN-59 radar is not a bad radar set, especially when the navigator is familiar with its capabilities.

When I was a student in NAV School and CCTS the greatest emphasis was placed on the ground-mapping and weather functions of the APN-59. Little was discussed about the skin-paint capability of the APN-59.

No doubt you've painted other aircraft in cell and adjusted the controls as necessary to obtain the optimum picture. The following techniques can be used to configure the radar as a "proximity warning indicator." Although these techniques apply to the APN-59 radar set, they can be modified to best suit other types of airborne radar equipment.

Continued On Page . . . 30



CFIC
O
R
N
E
R

THE TEAM: Operations and Maintenance

MAJOR DICK HILL
CENTRAL FLIGHT INSTRUCTOR COURSE
CARSWELL AFB

As we begin the 1980's, SAC faces the challenging task of training its aircrews to fly the highly complex EWO mission. Effectively training Air Force aircrews to prepare to fly complex missions such as EWO requires the concerted support of many agencies. In an operational wing, no two agencies are as dependent on each other as maintenance and operations. Without flyable aircraft and proficient aircrews, we cannot accomplish our mission.

Aircrew training becomes increasingly difficult as SAC's aircraft become older and the aircrew experience level decreases. The need for a stronger interface between operations and maintenance has never been more important. How can we work together to effectively accomplish this common goal? This article (based on KC-135 navigation systems) may help us all in our daily efforts to improve our own capability.

The key to an effective maintenance — operations relationship is the consistency and accuracy of the information flow. There are specific things that both the maintenance complex and the operations organization can do to enhance the information crossfeeds. The following items are brief examples of what maintenance and operations need from each other.

OPERATIONS NEEDS FROM MAINTENANCE

1. Having a total history of every aircraft system for each aircraft readily available for review by aircrews on mission planning day would be helpful. Crews can use this aircraft history to determine the available equipment to accomplish the specific requirements of the upcoming mission.
2. Having a list of telephone numbers of the specialists in each maintenance shop posted in each flying squadron is also helpful. This would allow aircrews to call a specialist when they have

questions about a piece of equipment or the status of a system.

3. Maintenance personnel should have an understanding of how the aircrews use the equipment. For example, navs were calling maintenance out to the aircraft during preflight because the INS was displaying a malfunction code that it could not self-correct. Maintenance simply corrected the malfunction by turning on the doppler system. It was discovered that the nav checklist didn't call for doppler system turn on until after engine start. Maintenance briefed the navs to turn on the doppler early in preflight if the INS displayed certain malfunction codes. This suggestion alleviated the problem.

4. Meaningful briefings from qualified maintenance personnel in conjunction with the Form 781 review. This should be accomplished during early stages of preflight so that a complete evaluation of open malfunctions can be accomplished.

5. Having qualified maintenance specialists at the postflight maintenance debriefing. They should establish the exact nature of each system or equipment malfunction from each applicable crew member. If a question about a particular malfunction cannot be answered at debriefing, the specialist should encourage the crewmember to call the shop for further information.

6. Specialized aircrew orientation briefing on equipment modification and special equipment test programs. The KC-135 is currently receiving the INS/DNS navigation system modification. Briefings by maintenance specialists on the INS system at the monthly instructor navigator meetings have been helpful in answering questions on the new system.

MAINTENANCE NEEDS FROM OPERATIONS

1. Clear, precise, complete written descriptions of aircraft malfunctions. Such information as pressure or current readings, altitude and phase of flight, and aircraft configuration greatly aid the speed and accuracy of repair. Avoid words like "shaky", "inop", "malfunctions", and "doesn't work." Be specific. Include any special information which only you, as a crewmember, would know such as a circuit breaker that had to be reset twice before the malfunction occurred. Remember, if a piece of equipment or system does not work optimally or malfunctions and you don't write it up — maintenance can't fix it.

2. Be sure to give the maintenance debriefer a clear and accurate description of your write-ups. Answer any questions that the debriefer has to the best of your ability. It may be helpful for aircrews to take brief notes about a particular malfunction during flight to expand upon their write-ups.

3. Detailed descriptions of discrepancies that occur during preflight or that are unable to be cleared by

flight time. Call in these discrepancies as soon as discovered. The operator can often identify a specialized need for a particular unit that maintenance would be unable to anticipate, and this unit should be identified during the call-in.

4. Aircrews should have a complete understanding of the malfunction and in-flight maintenance checklists available to them. The proper use of Dash I malfunction and equipment information can often alleviate in-flight problems or help provide necessary background information for maintenance when requesting their assistance.

5. Complete and accurate attention to all forms and records required in conjunction with new equipment modifications and test programs. Examples of this are the compilation of data on the accuracy of the new INS system and the recording of instrument data on the engine condition monitoring worksheet. These programs not only affect your base but the entire command.

There are other things that your unit can do to improve the interface between operations and maintenance. Specialists from one field can present briefings on current topics and problems to the other side. For example, a maintenance specialist could make presentations at the monthly meetings of your training flights. Your squadron staff could present unusual mission requirements to shop supervisors at informal sessions in the maintenance squadrons. This small investment reaps many dividends in mission orientation and could make a critical difference in mission success.

Orientation tours of the maintenance complex conducted by the squadron training flight for newly assigned personnel are very beneficial. New personnel can learn where the various maintenance shops are located and what services are available for them. It is also a good time for dialogue between operation and maintenance personnel on a one to one basis. Many questions can be answered and ideas exchanged during these tours.

The key to a good operations — maintenance relationship is meaningful communication. Problems will continue to come up. Man-made products will eventually malfunction. Do your maintenance personnel believe the operators caused these malfunctions? Have your crewmembers ever suspected that maintenance people can't fix the airplane? At times they both may have been right. By effective communication we can educate each other with the overall benefit being a safe, reliable airframe that can provide the best training.

This article presents some ideas that can be used to enhance the communications between operations and maintenance. These ideas may help your unit. If there are other programs that your unit effectively uses, let the other bases know — we all can benefit by this crossfeed.

THE AC/DC PILOT

Capt Chuck Unice and Capt Steve Wallingford
41 AREFS, Griffiss AFB

Congratulations, you are just back from CCTS/PUP and ready to show your abilities as a new aircraft commander, but your ops officer bursts your bubble when he tells you there are not enough copilots to go around (you almost wish TOOS and TASP were still here). So, you will be assigned to a crew as a copilot and be **dual-qualified**. Seat swapping pilots are not new. IP's have always done it. However, the new twist is that we as AC-DC pilots are not as experienced as the IP and do not have that time in the seat to rely on. This article should give you AC-DC pilots some tips on seat swapping, as well as providing AC's with pilot qualified copilots an idea on how to manage this new resource.

Let's start with the AC-DC pilot on a crew as a copilot. A good copilot never loses his stuff (are you a turtle today?). You just need to fly in the right seat once in a while to keep in practice. So if you have a normal AC (neither IP or AC-DC), you will constantly be pestering scheduling for that left seat ride just to stay current. When you get it, savor every moment and use the time wisely. Before you fly, review section two of the ol' Dash One concentrating on the pilot items. Study EP's, especially engine failure on takeoff. A good way to keep from repeating past mistakes is to review critique notes from your flights at Castle. Go over all of those different techniques your IP taught so you can practice them in flight. At CCTS the PUP is taught to make decisions, take action, and direct the crew. Now, when flying as the copilot, you will have to curb your recently developed command skills. Every aircraft can have only one commander. Be sure to clearly identify who is in command and making the decisions. S-1 is not an opportune time to bring the other pilot into the discussion. Besides re-

learning your copilot duties you will be flying in the ACE program. So don't forget to stay on top of those books.

Crews fortunate enough to have two dual-qualified pilots together can aid each other in perfecting their skills in both seats (just like flying ACE). Open communication and mutual respect for each other's abilities will go a long way in your development as an AC. Aircraft commanders with a dual-qualified copilot, have respect for him and his abilities. He is not the "typical" copilot. He is an AC just back from CCTS who worked hard to get a crew and is now in an awkward situation. So treat him as an equal. Bring the other pilot into the decision process (time allowing), so he can keep up on the deductive and management aspect of flying. Never forget, the person assigned as the aircrew commander is ultimately responsible for crew actions and conflict should not arise (remember — open communication).

Currency items and CDE's can be satisfied from either seat. But I would only log an A/R (R41) from the left seat. For your benefit, a CDE (P-98) has been put on the MAR to keep tabs on your last non-assigned crew position ride. You will receive a 60-1/4 check as a first pilot. But a copilot check is necessary. A copilot check consists of a takeoff, co-pilot duties and an approach and landing from the right seat (no sweat).

Being a dual-qualified pilot puts you in a special category in the modern day SAC crew force. It puts you one step closer to the duties of an IP and hopefully some extra flights. So take advantage of your opportunities and the little extra time spent to develop your skills will greatly increase the quality of your work.

Two Minute Warning

Capt Jensik
416 BMW Griffiss AFB

Perhaps the most sage advice ever given to any flyer is emblazoned on a plaque that hangs over the entrance of the CFIC classroom building. The message is clear and concise: FLY THE AIRCRAFT. As the airframes age beyond the 10,000 hour point, those words of wisdom take on an ever greater meaning for crewmembers not in immediate control of the aircraft, particularly navigators, EWs, gunners and boom operators.

To a man, each of us has seen his share of code 3 aircraft and inflight emergencies. At the same time the airplanes continue to age while the crew force remains young. A lack of experience, malfunctioning systems, and poor weather represent an ever present danger to safe flight. Now more than ever, members of the defensive teams can provide a margin of safety that may spell the difference between life and death.

The formula is relatively simple: be a crewmember. When the gear won't come up, or the flaps won't go down, get out the section three checklist and tell the pilot you're prepared to read it. When command post or bombplot starts talking during a particularly difficult point in the flight, ask them to standby. Monitor the descent checklist, and back up the crew on center directed altitude changes. Take the immediate pressure off the pilots, and minimize the distractions during malfunction analysis, and you will be performing a service every bit as valuable as setting the trim or moving the yoke.

Becoming totally involved in the flying process takes a little effort, it's true, but the motivation to do it won't come from any fear of a Stan Eval failure or a bad OER/APR. Rather, the understandable desire to prolong one's life, to *survive* each flight should provide the incentive to go that extra mile when the other people on your crew could be depending on you.

Continued From Page . . . 15

Now, back to that forecast. Do you see any other hazards? Consider the winds from that destination forecast. What does 0420G34 mean? a) You've got a southwest wind varying from 20 to 34 knots; b) you've got a northeast wind varying from 20 to 34 knots; c) you've got a wind blowing exactly from 040° at 20 to 34 knots; or d) none of the above.

The correct answer is 'd.' Surface winds never blow in a straight direction at a steady speed. Wind directions can and usually do vary through a 40° to 60° arc. If the winds vary by more than plus/minus 30 degrees, a special remark would be included at the end of the forecast or observation. The first speed (20) is the *mean* speed. The gust (G34) is the *peak* gust. In a situation like this the speed minima are called nulls.

These nulls are about as much slower than the mean as the peaks are above it. This means that the spread in wind velocity for this case is approximately 28 knots. Furthermore, these speed fluctuations occur frequently and abruptly. The correct interpretation of these winds is that the direction can vary rapidly from 010° to 070° and the speed from about six knots to 34 knots. This could be especially hazardous if you had to make a no-flap landing and the wind speed dropped 28 knots as you were on short final. Consider these wind fluctuations carefully when you plan your approach. If the winds are gusting at your destination contact Metro and ask for the full wind speed spread from nulls to gusts and the wind direction variation. Then plan your approach and landing speeds appropriately.

Then of course there are the other hazards of winter. Increased turbulence, lots of icing, severe thunderstorms in the southeast United States, ice and snow covered taxiways, etc. You are or should be familiar with these so I won't discuss them in detail. The bottom line is that winter flying presents more hazards than flying in other seasons. To insure safe operations you need to plan your mission carefully. You need a good preflight weather briefing and good enroute updates. Be sure to have the forecaster answer any questions you might have. You need to insure that your crew operates efficiently and professionally. You must avoid putting yourself in a situation where you have no options.

To insure safe operations in winter, remember the old definition of a superior pilot: "One whose superior judgment precludes having to rely on superior skill in order to survive." See you in the spring.

BIG INSTRUMENT FLIP and AIM

Captains John C. Conley and Rhett T. Cooper
Instrument Division, 1st Combat Evaluation Group
Barksdale Air Force Base

Here is a quick quiz to refresh your memory on a few instrument procedures found in FLIP General Planning and the Airman's Information Manual.

1. During cruise what ATC clearances should be read back by the pilot?

Answer: Pilots of airborne aircraft should read back those parts of ATC clearances which contain altitude assignments/restrictions or radar vectors, as a means of mutual verification. The readback should be made in the same sequence in which it was received and should be preceded by the aircraft identification. (FLIP GP, 5-18)

2. You have requested the HI-ILS RWY 8L approach at Hickam AFB. You are on a vector heading to intercept the localizer course when the controller informs you "cleared for visual approach." Can you discontinue the IAP and proceed strictly VFR for landing? Additionally, will traffic separation for preceding aircraft be issued by the controller?

Answer: The answer to the first question is, "it depends." Paragraph 410a(3) in the AIM requires the pilot, after being cleared for visual approach, to proceed to the airport in a normal manner **or** follow designated traffic and/or charted flight procedures, as appropriate, remaining VFR at all

times. Thus, if we can visually proceed to the airport, e.g., intercepting a normal final approach course from present position, then all is legal. However, the safest way to go is continue with the ILS approach. This will also aid in traffic separation, the second question. The controller will continue the flight following and traffic information until the aircraft is instructed to contact the tower which may occur prior to intercepting the final approach. It then becomes the responsibility of the pilot to establish a safe landing interval behind the preceding aircraft and insure his own wake turbulence separation. The "Visual Approach" clearance is simple to follow but a thorough understanding of the rules is most important. A review of paragraph 410 in the AIM will clear up any further questions you may have.

3. Does a "VFR Conditions on TOP" clearance provide traffic separation?

Answer: No. Whereas an IFR clearance in VFR weather conditions will provide standard separation between IFR flights only, the "VFR Conditions on TOP" does not provide traffic separation. The responsibility of avoidance of collision with other aircraft rests with the pilot. (FLIP GP, 5-9d).

4. You have just initiated the HI-TACAN 2

RWY 5 missed approach at Fairchild AFB (Figure 1), as stated in the Missed Approach instructions "direct to KNOCK and hold." Does this imply at KNOCK the holding pattern will be right turns, one minute legs, flying outbound on the 315° radial to the holding fix (KNOCK)?

Answer: No. It is true that KNOCK is the clearance limit, however, the AIM gives us specific direction for the correct procedure to follow. Paragraph 262a(5)(c) states "when the aircraft reaches the clearance limit and holding instructions or a clearance beyond the fix has not been received, the pilot should begin holding and immediately request further clearance. Holding shall be effected in accordance with the holding pattern depicted. If no holding pattern is charted, the pilot is expected to begin holding in a standard holding pattern on the course in which he approaches the fix." Application of this final requirement is shown on the HI-ILS RWY 1L at Andrews AFB (NAF), (Figure 2).

5. What is the proper terminology to be used for revised altitude clearance of "Pacer 82 descend to 16000?" (Assume you are at FL240)

Answer: After receiving a revised altitude clearance, include the newly assigned altitude/flight level when reporting vacating the previously assigned altitude/flight level. "Pacer 82, leaving FL240 for one six thousand." (FLIP GP, 5-18)

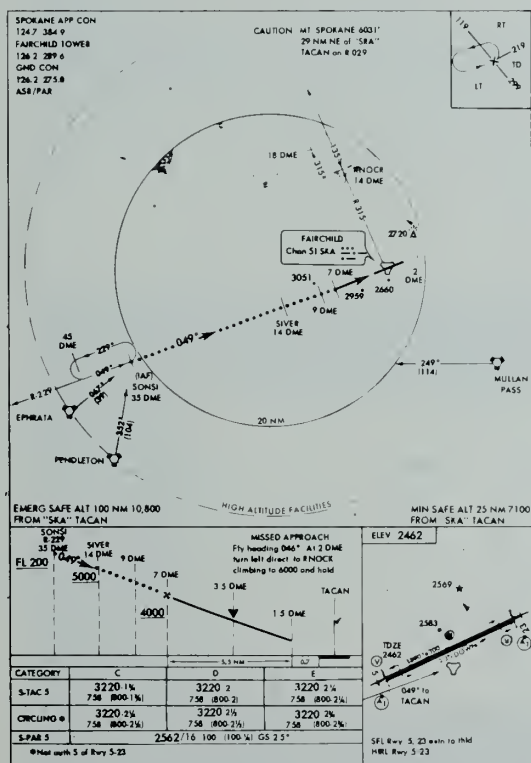


FIGURE 1

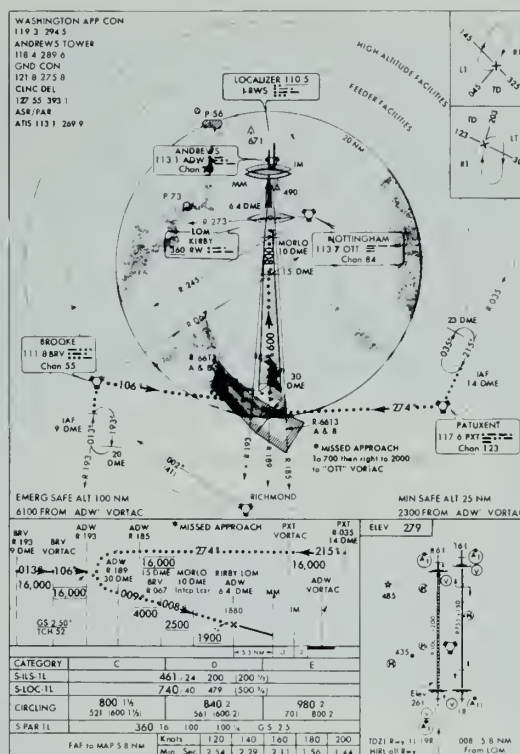


FIGURE 2

6. You have just started down on an ILS final approach when the navigator informs you he is receiving returns on his radar which look like thunderstorms but they are high. A very dark cloud is directly in front of the aircraft but it will be above your flight path. Should you continue the approach. ATIS does not mention any locally hazardous effects.

Answer: No! A thousand times NO! You may be asking "is this really a Big I question?" Yes it is. Remember, we are governed by AFR 60-1 which makes us responsible for following the guidance in FLIP, AIM, FARs, etc., and in this case the AIM, paragraph 526a(2) says "don't attempt to fly under a thunderstorm even if you can see through to the other side. Turbulence under the storm could be disastrous."

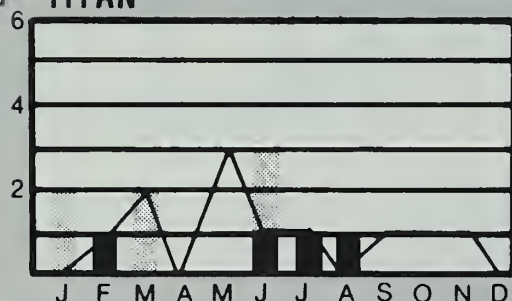
The bottom line to these exercises is to point out that the AIM and FLIP are in fact full of useful information covering a variety of subjects. If you want to become an expert in the area of instrument flights, here are two excellent pieces of literature for your library. A good instrument pilot must possess a thorough working knowledge of all the various regulations governing the operation of his aircraft. Then we will be able to devote our attention to performing precise instrument maneuvers.

1981

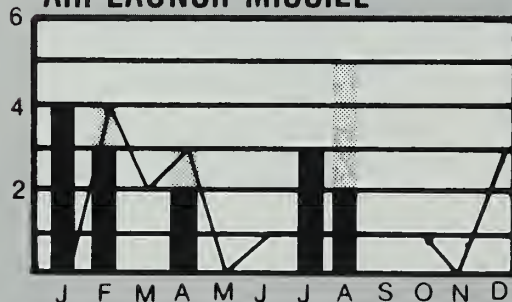


Space & Missile Mishap Experience

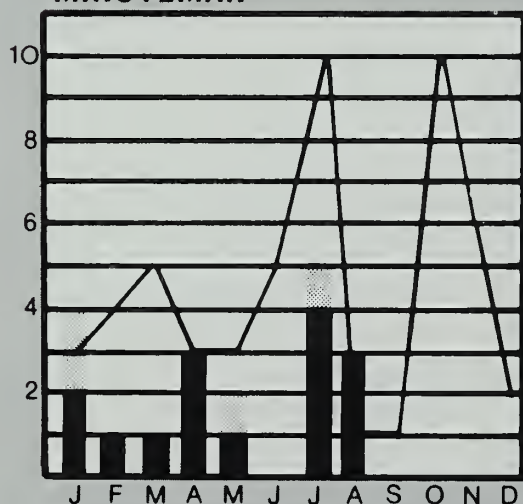
TITAN



AIR LAUNCH MISSILE



MINUTEMAN



PERSONNEL
ERROR

NON PERSONNEL
ERROR

TOTAL MISHAPS
1980

MISSILE MISHAPS

G&C Removal and Replacement

A missile maintenance team was performing a R&R of the guidance and control section. The RV had been removed and the penetration aid spacer was being prepared for removal. All mating bolts were removed except for one at the zero degree position. While hoisting the penetration aid spacer a small section of the guidance and control surface was torn loose. Personnel error. Technical data is considered adequate.

Close Order Drill

A civil engineering contractor team drilled into a three inch oxidizer load/unload propellant line. The pipe is maintained under a six (6) psi pressure and is isolated from the missile. The team was "exploring" for the source of a major water leak on complex. They were using a five (5) foot auger and when the drill hit the pipe a small stream of oxidizer vapor rose from the hole 25 to 30 feet, then dissipated within the confines of the complex. Personnel involved were not exposed. Lesson Learned: Efforts to locate underground pipes or power/communications lines must be carefully planned to preclude this type of mishap.

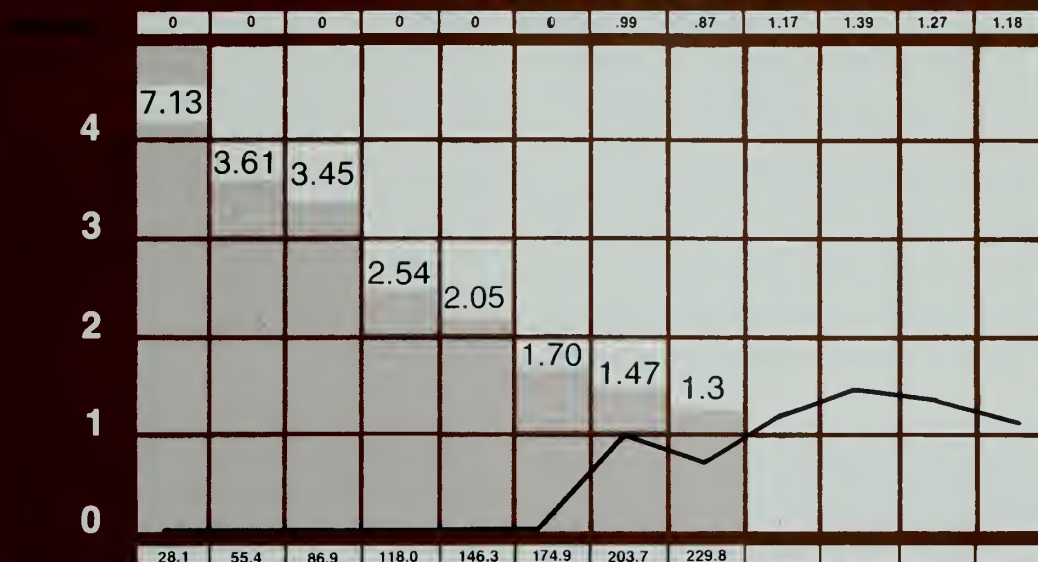
Multiplying Linkage Fingers

A missile maintenance team was closing the launcher closure when the multiplying linkage fingers caught on the bearing ring damaging the pick-up forks. The re-entry vehicle was not mated at the time. The cover plate on the linkage had been removed for maintenance the day before and had not been replaced. With the plate missing the detent spring kept the rocker arm assembly from moving to the full up or closed position.



1981 Flying Safety Rate

MAC CLASH & MISHAP RATE (PER 1000 FLIGHT HOURS)

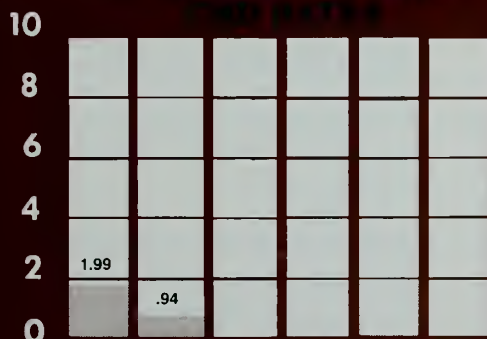


28.1 55.4 86.9 118.0 146.3 174.9 203.7 229.8

MISHAP STATUS BY TYPE & MONTH (PER 1000 FLIGHT HOURS)

MISHAPS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1980	0	0	0	0	0	0	2	0	1	1	0	0
1981	2	0	1	0	0	0	0	0				

MAC CLASH RATE (PER 1000 FLIGHT HOURS)



1.99 .94

MISHAP STATUS

KC-135 A	JAN '81
FB-111A	JAN '81
RC-135S	MAR '81

COLD NIGHT OUT

Maj Kenneth M. Phail
1 CEVG

Sgt Robert Wirgau, RBS analyst for Det 33M, 1 CEVG, SAC, departed contract quarters at 0100 hours 25 January enroute to a mobile site located 36 miles west along a major state highway. Weather conditions were similar to what he had experienced for the past several weeks: cold, windy, light blowing snow. This weather held until he passed the town of Ipswich, South Dakota, five and one-half miles from the radar site. There the wind velocity increased and visibility dropped rapidly.

The sergeant slowed the vehicle as visibility became zero. The vehicle drifted slowly across the left lane and left shoulder. He was aware that he had left the road when the vehicle started to nose down and lean to the left. He tried to back up, but the vehicle would not move. Time was 0200 local. At 0300 hours, the operations crew chief called the work center supervisor (WCS) to inform him that Sgt Wirgau had not arrived. He reported that visibility at the site was absolute zero due to high wind and blowing snow. The WCS notified the commander who notified the highway patrol. The highway patrol reported that visibility was zero and it would be impossible to put any rescue vehicle out until conditions improved.

The weather station at the Aberdeen Airport reported little chance of improvement over the next 18 to 24 hours. This report proved accurate, with winds running 35 to 45 MPH, temperatures two to six degrees below zero and visibility officially reported by the National Weather Service as zero throughout the day.

Other than advising headquarters, and checking periodically with the police, the weather station and the crew isolated at the site, little else was possible. Information was passed to a local radio station requesting them to advise Sgt Wirgau that the authorities were aware of the situation and to remain in the vehicle no matter what. They cooperated and broadcast the information repeatedly (as it turned out, Sgt Wirgau's first comments upon rescue were that these messages had a great effect on his morale and helped confirm the wisdom of remaining in the vehicle as he had been briefed).

By 1700 hours, the weather service forecast called for conditions to start improving late that night, but temperatures could go as low as minus 25 degrees. Since Sgt Wirgau had been out for 15 hours already, it was believed that even if he avoided the chill factor effect by being in the vehicle, the extremely low temperatures forecast would seriously reduce his survival chances. A decision was made to attempt a search mission in spite of police assurances that travel was impossible.

At 1900 hours, the commander and three other members of the detachment departed Aberdeen in a four-wheel drive vehicle with heavy cold weather gear, sleeping bags, etc., sufficient to insure survival if stranded. A CB link was established with an Aberdeen base station (run by the local AF Recruiter) which relayed information to other stations located along the intended route. Visibility outside city limits varied between zero and 100 yards. Slow but steady progress was made for 15 miles until

large (three to four feet) drifts were encountered. These were surveyed on foot before attempting passage. After two miles of these occasional drifts, the vehicle became bogged down. Information was passed by radio that they thought they could dig themselves out but were advised that a tractor was working on a side road nearby and could assist. After one hour of digging, the tractor arrived and pulled the vehicle free. The mission was abandoned and the party returned to Aberdeen. The sheriff's office was advised that a snow plow was needed. It was dispatched after a series of phone calls. The missing airman was located and taken to the Ipswich hospital for examination.

He had been trapped for a full 24 hours, but was able to operate the engine for about two hours after being stranded. A drift had formed under the truck which ended up completely packing the engine compartment. He had his portable AM radio which he used to monitor weather information and help keep up his morale. He used scraps of paper and rags to help block drafts which were allowing snow to enter the cab. He used a knife to remove the seat covering enabling use of the foam rubber to supplement his clothing. He was dressed warmly, with long underwear, parka and mukluks.

Although highway safety kits had been provided for each vehicle, the kit in this particular one was incomplete. Two weeks prior to this incident, the rear window shattered at 28° below zero, and blowing snow filled the cab. The cardboard box containing the kit was ruined and several items in it, including the blanket, were brought inside to dry out. They were never returned to the vehicle.

Sgt Wirgau survived with no ill effects due to the following:

- He remained with the vehicle, avoiding exposure to -50 to -60 degrees chill factors. He had received an individual briefing in which I had stressed this point emphatically.
- He was dressed properly, with mukluks, long underwear and parka.
- He used available resources to best advantage (vehicle seat cushion padding, etc.)
- He was sure that we would be aware of his situation and would be making every attempt to get

to him. This was reinforced by the radio messages and kept his morale up despite what seemed an interminable length of time.

A critique of the incident brought out the following comments:

The omission of the blanket and candles from the highway safety kit, while not required by directive, was a serious matter that could have adversely affected the outcome. Steel file boxes had been ordered prior to this to help consolidate the kits and protect the contents and have taken steps to tighten up the daily inspections of the vehicles by the monitors.

It was not determined if the situation could have been avoided. The forecast weather had been calling for high winds and blowing snow with a maximum accumulation of less than two inches. The low for the night was expected to be 5° below zero, slightly warmer than we had been experiencing for several weeks. The first weather advisory from the support base was not received until 0749 hours, more than five hours after conditions had deteriorated. It is not known what time this weather arrived at the site. If Sgt Wirgau had called from the motel at 0100 to check on conditions at the site, they may or may not have been able to determine that it would be unsafe to travel. In any event, this phone call is now a required procedure.

The mobile/remote site locations, hours of operation and frequently, long distances between quarters and site more than justify the cost of AM radios in GSA vehicles assigned. They are worthwhile not only for weather reports, but also to keep the driver and passengers more awake during late night trips back and forth. Also, it may be difficult to obtain authorization for citizen band radios for these vehicles, but their worth is obvious. If Sgt Wirgau had been able to communicate his exact position it is possible the highway department could have been convinced to make an attempt to reach him hours in advance. The site vehicle used primarily for late man and operations analyst has been so equipped, on a temporary basis, at private expense.

HEADS UP

Capt Dee Porter, 9th SRW, Beale AFB, flew his first sortie in a U-2R. He had already qualified in the U-2C but this was his first solo in the single-seated U-2R. There's a big difference between the two aircraft so the first sortie is always loaded with excitement. Takeoff and climb to 16,000 feet was normal. Shortly after leveloff the aircraft experienced complete hydraulic failure due to a hydraulic line separation in the speed brake area. Captain Porter declared an emergency and turned back toward Beale. En route he established communications with the mobile officer (a U-2R IP) to coordinate his planned emergency landing. While adjusting the gross weight for landing, discussions centered on landing with no flaps, no speed brake, no roll or lift spoilers and only accumulator pressure available for braking. He flew one low approach to get the feel for his first landing in the U-2R. The approach and landing in a no flap configuration is extremely critical since the required airspeed crossing the runway threshold is one knot above stall speed. The second approach was a flawless full stop landing. After touchdown, the brakes were used in one smooth continuous application until the aircraft came to a stop. It was a remarkable job and demonstrated Captain Porter's exceptional airmanship.



Missile Crew of the Month

On a recent alert, the crew supported blast valve maintenance contractors when the shutdown of silo equipment area and launch duct air conditioning systems were required. This condition caused stage I oxidizer tank pressure to exceed limits. Job Control and Wing Command Post were notified, and the crew restarted the air conditioning system and associated equipment. They began monitoring stage I oxidizer tank pressure and launch duct temperature for expected decreases, however, the tank pressure continued to rise. The crew began trouble analysis, resulting in the adjustment of a temperature controller, but the tank pressure was still rising approaching sortie degrade status. The Missile Combat Crew Commander (MCCC) then dispatched the Missile Systems Analyst Technician (MSAT) and Missile Facilities Technician (MFT) to the silo to check the temperature. Upon arrival on silo level two, the crew found the chilled water return line had ruptured flooding that area. The crew then checked the main electrical distribution center for the missile site (MCC-1) and found it was drenched with water. The crew restricted MCC-1 area silo level 3 and had the MSAT and MFT redirect the water flow away from MCC-1. The crew's actions eliminated the immediate water hazard preventing the need of the complex depleting their battery power supplies. In addition, this allowed maintenance the time to arrive at the complex and begin the repair. As attempts were made to repair the ruptured line, Stage I oxidizer tank pressure and launch duct temperature began to rise at a rapid pace. With no cooling water, the MCCC called base weather for a topside temperature and found it to be 57 degrees. The MCCC then obtained permission to initiate purge to cool the launch duct. This action allowed maintenance the time needed to return the chilled water system on line and prevent the sortie from going off alert.



CREW E-012, 308th Strategic Missile Wing, Little Rock AFB: MCCC 1Lt Peter P. Guelta-Taylor, DMCCC 2Lt Royce S. Simmonds, MSAT TSgt Nelson Wellspeak, and MFT SrA Michael A. Greene.

Safety Man of the Month

SSgt Bostic was assigned to the position of Nuclear and Missile Safety NCO for the Communications Squadron on 2 June 1980. SSgt Bostic's efforts were instrumental in enabling the 2154 CS to undergo three major inspections and not receive less than a satisfactory rating. His dedication has greatly enhanced the Wing Safety Program. This was evidenced by the excellent rating the Wing Nuclear Safety Program and the safety portion of the Nuclear Surety inspection received during the last SAC IG Inspection. SSgt Bostic conducts all Missile and Nuclear Safety Training for the 2154 CS, monitors for potential problem areas, and conducts mishap investigations while performing his primary duties as Job Controller in an outstanding manner. His indepth inspections have greatly improved the Communications Squadron's Nuclear and Missile Safety Programs. SSgt Bostic's efforts have made the Communications Squadron's Safety Program the envy of all other units on base. SSgt Bostic's contributions to the Safety Program and his support of the SAC Mishap Prevention Program make him most deserving of recognition as Safety NCO of the Month.



SSgt Roger G. Bostic, 2154th Communications Squadron Job Control, Whiteman AFB.

PROFESSIONAL PERFORMERS

Maintenance Airman

AIC Jane L. Word, 384th ARW, McConnell AFB, is SAC Maintenance Airman of the Month. Airman Word demonstrated outstanding ability in all areas of avionics instrument systems maintenance. Her thorough knowledge of electronics has greatly aided the shop in maintaining the complex dual integrated flight direction system, both on-equipment and shop repair of line replaceable units. She has played a key role in maintenance and repair of periscopic sextants, enabling the shop to sustain a 95% system reliability rate. In addition to her duties as an instrument technician, she took the initiative to become familiar with the MC-1 auto pilot system to assist the automatic flight control shop which is critically short of personnel. Airman Word's commitment to the wing's mission is truly outstanding and she is a credit to SAC and the United States Air Force.



Flight Engineer Initial Qualification

	Duration Weeks
15 academic days including CPT	3
9 simulator missions	2
Total course approx	5 weeks

Boom Operator Initial Qualification

	Duration Weeks
15 academic days including BOT and cargo loader trainer	3 weeks

In each course, two students (P/P, P/CP, CP/CP, FE/FE, BO/BO) will be teamed together. Each student pair will be scheduled for all simulator training as a team. No classroom instruction is planned and all system courses will be taught in the self-paced learning center carrel. The learning carrel instruction will be augmented by the CPT for the pilots and flight engineers and by BOT/cargo loading trainer for the boom operators. For the pilots, the total CPT time will contain about 28 hours of instruction.

All courses of instruction have been developed utilizing the Instructional System Development (ISD) approach. AF personnel from the 4235 STS and Det 2, 4200TES have managed and approved the course development and ensured that all lesson materials were technically correct and meet the AF goals for the training system.

The Training Facilities

The training facilities at Barksdale AFB, the KC-10 Main Operating Base, have been developed in two parts. A Part Task Trainer facility has been modified to house the CPT and BOT that will be delivered in October 1981.

This facility will also serve as the training center until a permanent facility is completed in Jan 83. Once completed, the flight simulator, CPT, BOT and learning center will be housed there.

The KC-10 promises to fulfill the U.S. need to achieve global mobility independent of forward bases. The training system developed complements this mission by providing trained crews able to meet the most demanding missions. The system is unique in the AF in that it maximizes the commercial DC-10 training experience, and will be totally contractor operated and maintained.

The detailed planning and procurement of the training system concurrently with the aircraft has been a challenge; however, the results promise to be very rewarding.

1. **INTENSITY** — Set at slightly above the point where the trace is visible.

2. **GAIN** — First, set the FINE GAIN control midway to the MAX position, then bring up the COARSE GAIN to approximately four.

3. **VARIABLE RANGE** in 3-30/1: At a closure rate of 800 knots, only 15 seconds will elapse before two aircraft overtake each other on antithetical courses, when detected at three miles. A minimum of three miles (equipment limitation) and a max of seven miles is recommended. Beyond seven miles returns are rather faint for smaller aircraft, and meteorological conditions (icing in clouds) will certainly affect the quality of the picture. Regarding the use of "WARN" instead of "SEARCH", the "DASH 1" states "definition of targets is less than optimum on ranges shorter than 50 miles."

4. **SCAN: PPI or Sector.** PPI allows greater visibility than sector, of course. Should a target be detected within 30° either side of the nose of the aircraft, sector scan can be used.

5. **PATT SWITCH: Fan or Pencil.** At cruise altitudes "Fan" is acceptable. When using PENCIL beam the higher concentration of energy permits better reception and at lower altitudes the narrow beam minimizes ground clutter.

6. **TILT (+2 to -3)** Adjust by small increments and adjust frequently. (According to maintenance personnel the calibration of the dial may not be precise. Alignment in the teeth of the gear that drives the antenna up or down can be in error in excess of 2°.) For this reason you should remember to readjust the tilt frequently especially when using pencil beam, and when climbing or descending.

7. **HDG SELECT: 0°** when bearing switch is in STAB. This allows the HDG flash to display magnetic heading.

8. **HEADING MARKER: Dim or OFF.** Turn the rheostat to minimum, and the FINE GAIN up slightly. This will create a blackout trace of the HDG marker, when using the solid-state radar. This is useful for detecting a faint return which may otherwise have been hidden behind a bright HDG flash (marker).

9. **IAGC.** Ensure it is in the Down position.

10. **STAB (ANTENNA Stabilization): UP**

11. **Bearing: STAB or Relative**

I've used these techniques with enough time available to avoid a flock of birds on departure climbout, and to detect small aircraft (as small as a Cessna 150) at altitudes as low as 2,000 AGL.

A little creativity and a note of discernment will be instrumental in the safe accomplishment of the mission.



SAC

SAFETY SCREEN

351 SMW, Whiteman Crew E-032: MCCC 1Lt Robert L Flores DMCCC 2Lt George S Maxwell

134 AREFG, Tennessee ANG: IP Capt James R Rice, CP Capt Robert M Smith, IN Maj Ronnie H Gill, IBO SSgt Kelvin H Kuwik

90 SMW, F E Warren Crew R-033: MCCC 1Lt David M Riester, DMCCC 2Lt Lee D Bollert

91 SMW, Minot Crew R-094: MCCC 1Lt John I Pargeon, DMCCC 2Lt Ronald K Unruh

321 SMW, Grand Forks Crew R-087: MCCC 1Lt Everett R Boguess, DMCCC 2Lt Danny F Hargraves

390 SMW, Davis Monthan Crew R-007: MCCC Lt C Donald Alston, DMCCC Lt William M Strand, MSAT Sgt Gilbert L Ayscue, MFT SMSgt Augustus C Meyers

909 AREFS, Kadena Crew R-123: P Capt James D Haas, CP Capt James E Nothsting, IN 1Lt James J Gilboy, IS SSgt Danny Thomas

42 BMW, Loring Crew S-01: P Capt John D Brandon, CP Capt Timothy C Jones, RN Capt John T White, N Capt Larry J Reasoner, EWO Capt Michael E Wright, G TSgt Dennis E Larson

407 AREFS, Loring Crew R-162: P Maj Arthur M Dobney, CP 1Lt Norris D Shane, N 1Lt Gregory J Cannava, BO SSgt Philip A Rogers, BO SSgt Daniel L Jones

42 AREFS, Loring Crew S-102: P Capt James O Kallstrom, CP Capt Russell W Rydka, N Capt Robert E Bunnell, BO SSgt Peter J Tripi

46 AREFS, K I Sawyer Crew R-109: P Capt Robert L Zobel Jr, CP 1Lt Earnest L Sheldon Jr, N 1Lt William R Baker, BO Amn Michael E Sage

46 AREFS, K I Sawyer Crew E-110: P Capt Allan M Coleman, CP 1Lt Stephen W Stubbs, N 1Lt Allen F Anderson, BO SSgt Kenneth L Nichols

410 BMW, K I Sawyer Crew S-21: FP Lt Col Robert D Hennessy (Staff), IP Capt Michael G McConnell (S-03), CP Capt Jerry Morrison, NB Capt James A McLaughlin, NN 1Lt Barry J Olson, NE Capt Clayton M Nobles, AG SSgt Kendall R Babbitt

410 BMW, K I Sawyer Crew R-22: FP Capt Thomas J Walke, CP 1Lt Kim D Kelly, NB Capt Steven L Schneid, NN 1Lt Lloyd B Helton, NE Capt Gerald L Finch, AG SrA Kenneth L Stroud

7 AREFS, Carswell Crew E-124: P Capt Charles P Gilbert, CP 2Lt James G Christy, N Capt James A Lowes, BO TSgt Keith D Taylor

7 BMW, Carswell Crew E-24: P Capt Kenneth L Miller, CP 1Lt David A Honey, RN Capt Joseph Gaddis Jr, N 1Lt James J Stahl, EWO Capt Charles E Bellamy, G Sgt Robert W Galey

41 AREFS, Griffiss Crew E-106: FP Capt Edward A Koslowski, CP 1Lt Stephen G Franklin, IN Capt Edward F LaBarre, BO SrA James T Gosselin

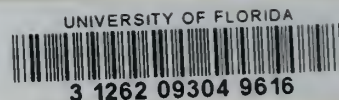
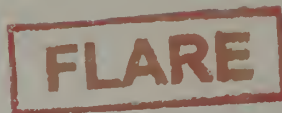
92 BMW, Fairchild Crew E-182: P Capt Wayne Burgess, CP Capt Pete Johnson, N 1Lt Harry Hostler, BO A1C Michael Machovec

9 SRW, Beale Crew E-08: P Maj Jerry T Glasser, RSO Maj D M Hornbaker

55 SRW, Offutt Crew E-113: IP Capt Albert J Franko, CP 1Lt Leroy T Hicks, IN Maj John V Ripper, IBO SSgt Robert T Adams

416 BMW, Griffiss Crew R-06: FP Capt Gregory L Wendt, CP 1Lt Russell J Danwin, RN Capt Mark V Viscanti, NN 1Lt Michael Hutchinson, EWO 1Lt David Maldonado, AG Sgt William J Pangborn

The SAC Safety Screen is an honor roll of SAC's most professional crews. To gain listing on the Screen, crew members must be nominated by their unit commanders and meet high selection criteria of experience in their aircraft or missile system IAW SACR 127-2.



HALL OF FAME

TACTICAL FLYING

OVER TWENTY-FIVE YEARS	
170 AREFG, McGuire (NJANG)	Feb '56
OVER TWENTY-THREE YEARS	
171 AREFW, Greater Pittsburgh (PAANG)	Mar '58
157 AREFG, Pease (NHANG)	June '58
OVER TWENTY-TWO YEARS	
940 AREFG, Mather (USAFR)	May '59
307 AREFG, Travis	Sep '59
OVER TWENTY YEARS	
151 AREFG, Salt Lake City (UTANG)	Feb '61
161 AREFG, Sky Harbor (AZANG)	Apr '61
126 AREFW, Chicago O'Hare (ILANG)	Apr '61
134 AREFG, McGhee Tyson (TNANG)	Aug '61
OVER NINETEEN YEARS	
11 SG, Fairford	Feb '62
340 AREFG, Altus	Jun '62
96 BMW, Dyess	Aug '62
OVER EIGHTEEN YEARS	
19 BMW, Robins	Aug '63
OVER SIXTEEN YEARS	
160 AREFG, Rickenbacker (OHANG)	Dec '64
320 BMW, Mather	Jul '65
452 AREFW, March (USAFR)	Sep '66
OVER FOURTEEN YEARS	
92 BMW, Fairchild	Feb '67
55 SRW, Offutt	Jul '67
2 BMW, Barksdale	Aug '67
OVER TWELVE YEARS	
5 BMW, Minot	Feb '69
42 BMW, Loring	Sep '69
OVER ELEVEN YEARS	
141 AREFW, Fairchild (WAANG)	Oct '69
28 BMW, Ellsworth	May '70
OVER NINE YEARS	
101 AREFW, Bangor (MEANG)	Mar '72
306 SW, Mildenhall	Apr '72
416 BMW, Griffiss	May '72
305 AREFW, Griffissom	Aug '72
OVER EIGHT YEARS	
379 BMW, Wurtsmith	Apr '73
OVER SEVEN YEARS	
931 AREFG, Griffissom (USAFR)	Feb '74
384 AREFW, McConnell	Mar '74
189 AREFG, Little Rock (ARANG)	May '74
OVER SIX YEARS	
43 SW, Andersen	Dec '74
68 BMW, Seymour Johnson	Sep '75
OVER FOUR YEARS	
410 BMW, K.I. Sawyer	Apr '77
190 AREFG Forbes (KSANG)	Apr '77
128 AREFG Milwaukee (WIANG)	Jul '77

ICBM

OVER SEVENTEEN YEARS	
1 STRAD, Vandenberg	Sep '64
OVER ELEVEN YEARS	
341 SMW, Malmstrom	Apr '70
OVER EIGHT YEARS	
390 SMW, Davis-Monthan	Jul '73
OVER SIX YEARS	
351 SMW, Whiteman	Oct '74
91 SMW, Minot	Nov '74
OVER FIVE YEARS	
321 SMW, Grand Forks	Feb. '76

To gain listing in the Hall of Fame, a SAC or ARF unit must be Class A mishap-free for 48 months.